



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,054	11/25/2003	Carol Jeffcoate	HO2-0002	7777

7590 11/19/2009
Honeywell International Inc.
101 Columbia Road
P.O.Bpx 2245
Morristown, NJ 07962

EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
----------	--------------

1795

MAIL DATE	DELIVERY MODE
-----------	---------------

11/19/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/723,054	Applicant(s) JEFFCOATE, CAROL	
	Examiner Tony Chuo	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment/Argument

1. Claims 12-28 are currently pending. Claims 1-11 are cancelled. The previously stated 112, 2nd paragraph rejection of claim 26 is withdrawn.

Applicant's arguments filed 7/9/09 regarding the 112, 1st paragraph rejection of claims 12-28 have been fully considered but they are not persuasive.

The applicant argues that examples 1 and 2 inherently describe, "measuring the operating temperature of the fuel cell assembly." Firstly, the specification states that the temperature gradient is kept optimal over the entire plate resulting in optimal performance of the fuel cell. See specification at paragraph [0073]. Since the temperature is adjusted to obtain optimal performance of the fuel cell, the temperature of the fuel cell is necessarily adjusted during operation. The specification further states that each thermocouple measures the temperature of the fuel cell assembly at its location and adjusts according to the measured temperature in order to keep the fuel cell at the optimal temperature. See specification at paragraph [0072]. Since the optimal temperature of the fuel cell is maintained during operation of the fuel cell in order to achieve optimal performance, it follows that the thermocouple is measuring "the operating temperature" of the fuel cell. Secondly, in Example 2 the specification clearly describes, in paragraph [0074], the operation of a fuel cell and the measurement of the operation temperature. Specifically, paragraph [0074] states that hydrogen fuel and oxygen enter at a gas inlet, the product of the reaction exits at an outlet, and flow

Art Unit: 1795

channels channel the reactant and product gases across the length of the fuel cell assembly. The specification further states that Figure 5b shows the temperature gradient associated with this reactant channel arrangement and that Figure 7 shows the thermoelectric layer used with the fuel and oxidant flow channel arrangement. In addition, a thermocouple, which measures the temperature of the fuel cell assembly at its location, is located between each pair of adjacent thermoelectric devices. The voltage of the power source, and thus the amount of heat transferred, is then adjusted according to the measured temperature in order to keep the fuel cell at the optimal temperature. Once again, since the temperature is measured and adjusted during operation, the measured temperature is necessarily the operating temperature. Thus, the specification clearly describes the configuration where the thermoelectric layers are operated during normal operation of the fuel cell stack in order to achieve optimal performance. Therefore, the step of measuring the operating temperature of the fuel cell assembly is adequately described.

In response, the examiner disagrees that examples 1 and 2 inherently describe, "measuring the operating temperature of the fuel cell assembly." Although paragraph [0073] of the specification states that "the temperature is optimal over the entire plate resulting in optimal performance of the fuel cell", the temperature of the fuel cell is not necessarily adjusted during operation. The temperature of the fuel cell can be adjusted during the start-up of the fuel cell which is not during normal operation of the fuel cell. Further, the optimal temperature of the fuel cell is not necessarily maintained during normal operation of the fuel cell because it can also be during the start-up of the fuel

Art Unit: 1795

cell. As stated below, the specification describes using the thermoelectric layers to heat up the fuel cell during the initial start-up and not necessarily during normal operation. Since the term “operating temperature” is construed as being the temperature of the fuel cell during normal operation, the examiner maintains the contention that subject matter of claim 12 is not supported by the original disclosure.

Therefore, upon further consideration, claims 12-28 stand rejected under the following 112 rejection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 12-28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitations “measuring the operating temperature of the fuel cell assembly in contact with a thermoelectric layer” and “measuring the operating temperature of the fuel cell assemblies adjacent to the thermoelectric layers ...” are not supported by the specification. The applicant has cited paragraphs [0014],[0023],[0025],[0026],[0070]-[0075]) and Examples 1 and 2 of the specification for support for the claimed subject matter. However, none of the

Art Unit: 1795

paragraphs cited explicitly discloses “measuring the operating temperature of the fuel cell assembly”.

In fact, paragraph [0023] of the specification states that “Starting the fuel cell may require heating in order to allow the catalyst to achieve optimum temperature. It is desirable in a fuel cell to minimize start-up time so that the user does not have to wait for the temperature rise before using the device or application. In addition, minimizing start-up time reduces the time that the fuel cell is not operating at maximum efficiency.” In addition, paragraph [0071] of the specification states that “In some embodiments, the thermoelectric layers draw heat from the coolant to heat up the stack. Heating the stack may be desirable when first starting the stack, particularly in the case where the fuel cell is operated in cool ambient temperatures. The catalyst would be brought to optimum temperature quickly, thus reducing start-up time.” These parts of the disclosure clearly show that the thermoelectric layers are operated during the start-up of the fuel cell stack, not during normal operation of the fuel cell stack.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 1795

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571)272-0717. The examiner can normally be reached on M-F, 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795